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METHODS OF HEALTH INSTRUCTION IN THE SIXTH GRADE¹

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Articles appearing in the September, November, and January issues of the *Elementary School Journal* emphasized methods for teaching the following health principles in the first five grades: (1) going to bed at seven or eight o'clock, depending on the age of the child, (2) drinking milk three times a day, (3) brushing the teeth every night, (4) drinking a glass of water before breakfast, (5) eating cooked cereal every morning, (6) eating fruit once a day, (7) eating each day one vegetable in addition to potatoes, (8) eliminating tea and coffee from the diet, (9) eating no sweets between meals and reducing the amount eaten at meals, (10) eating meat only once a day, and (11) having fresh air at all times, especially at night.

A. HEALTH PRINCIPLES TO BE TAUGHT IN THE SIXTH GRADE

In the previous articles the health rules for the particular grades have been presented, supplementing those emphasized in the earlier grades. The health rules suggested for the sixth grade are (1) cleanliness, (2) the necessity of having breakfast every morning, and (3) thorough mastication of food. It can be seen that the plans of each grade do not follow any logical classification but that the decision to place the teaching of particular health rules in certain grades is based upon the psychological as well as the physiological characteristics of children at the different ages, upon the relative importance of the health rules, and upon possible adaptation to the general course of study. A brief discussion of the reasons for inculcating in the sixth grade the rules just suggested may not, therefore, be out of order.

¹ This is the fourth of a series of articles on classroom methods for increasing the efficiency of health instruction in the public schools contributed by the Elizabeth McCormick Memorial Fund. Reprints of these articles may be obtained from the Elizabeth McCormick Memorial Fund, 848 North Dearborn Street, Chicago, Illinois.

Psychologically, the tendency of the child, especially the boy of eleven or twelve years of age (the age of the majority of the pupils of the sixth grade), to regard society in general as antagonistic to his interests, his inclination to regard his family as a necessity rather than as a pleasure, his desire to be with the "gang" as much as possible, his love for outdoor life, and his apparent indisposition to take time to attend to personal habits, to eat breakfast, and to masticate his food thoroughly, are good reasons for including in the work of this grade the three rules suggested.

Physiologically, "we have also evidence from returns and anthropology . . . that the skin becomes more glossy, an effect which it is often striven to increase or diminish by various crude cosmetics, and also that the secretion of sweat is more copious. Both these are factors in the new sense of cleanliness or uncleanness which now arises."¹ From the standpoint of the second and third suggestions, the following statement by Hall is significant:

The rhythm of meal-times often tends to break up as if by a new wave of influences from the irregularities of the savage life of our forefathers. In nervous temperaments, especially, food is bolted and breakfast slighted, and love of occasional excessive gorging on edibles not hitherto staple alternates with indifference to or criticism of the family table. . . . Milk, often taken copiously and with zest before, now becomes unpleasant, and the proportion of solid food desired increases. . . . There is often a new tendency to bolt food unchewed, due perhaps to more impetuosity of appetite or the increased nerve tension, and temporary loss of the poise that good table manners suggest in this respect.²

From the evening meal to the following noonday meal is too long a period for children to be without food. The omission of breakfast not only results in an insufficient amount of food being taken in the other two meals to satisfy the child's daily physical requirements, but may also result in destroying the rhythmic flow of the digestive juices, the effect of which may not be felt at once but may lead to digestive disturbances in later life. The value of breakfast, therefore, cannot be overlooked at this period of health instruction.

¹ G. Stanley Hall, *Adolescence, Its Psychology and Its Relations to Physiology, Anthropology, Sociology, Sex, Crime, Religion and Education*, II, 7. New York: D. Appleton & Co., 1904.

² *Ibid.*, pp. 11-13.

As the child enters the adolescent period he requires an increased amount of food. A large proportion of this increase will naturally be taken from the foods known as carbohydrates which include starch and sugars. In this group such foods as breads, potatoes, cereals, fruits, and vegetables are found. In digestion "both the starch and the sugar are practically completely digested, especially if the starch is cooked. If raw starch is eaten, however, such as that in green bananas, some of the starch may escape digestion and utilization. The starch is acted on by the saliva in the mouth, the action is continued for a time in the stomach, and the process is completed in the small intestines. . . . The sugars are digested mostly in the intestines, giving glucose or similar simple sugars. Thus starch and sugars are ultimately changed to practically the same products in the body."¹ It can readily be seen from this statement that it is very important to teach the child to masticate his food thoroughly so that he may obtain the greatest benefit from it at this period of rapid growth. There is no doubt that one of the reasons for underweight is the incomplete utilization of food caused by the bad habit of "bolting the food."

B. RECOMMENDATIONS FOR TEACHING HEALTH PRINCIPLES IN THE SIXTH GRADE

Regardless of the particular phase of health education emphasized in any grade, there should always be at least one or two devices used in each grade to aid in maintaining an abiding interest in a balanced diet—devices of such a character that an opportunity is given to review the knowledge gained in the previous grades and to determine whether a desire is created on the part of the child to follow suggestions until habits are formed. There are three subjects found in the regular course of study of the sixth grade which can, perhaps, be utilized. They are English, history, and arithmetic.

Swift in his study on youth says,

We have seen that the same subjects of study are tedious under the ordinary classroom method and interesting when made the order of business in a club of the members of the class of which the teacher is an integral but an inconspicuous

¹ Katharine Blunt and Florence Powdermaker, *Food and the War*, p. 17. Boston: Houghton Mifflin Co., 1918.

part. The club idea appeals to the racial instinct of the love of glory—showing off and personal competition, both of which are elements in the group sentiment. There is no lack of attention here.¹

The desire of the school to interest the children in health education should, of course, take into account these natural inclinations as far as it is possible to do so. Norsworthy and Whitley state that "the attempts at ignoring or suppressing this instinct are the cause of much of the problems of discipline in the schools. . . . The fact that the schools, many of them, are so organized that this instinct is not given an opportunity to work itself out in connection with the school work is the cause of much of the dissatisfaction with school in boys eleven and twelve, as well as the cause of much of the dropping out from the sixth and seventh grades."²

A "convention of foods" is a device recommended for this grade—a device which will utilize these instincts and at the same time review the reasons *why* certain foods should be a part of the daily diet. The plan of this convention should be written by the children as a part of their composition work. The class should be organized according to *Robert's Rules of Order*, thereby giving training in methods of conducting a meeting. The children, having elected a chairman who for the purpose of health education might be called "Judge Scales," are assigned various foods which they are to represent. Various committees should be appointed, the honor of chairmen being given to those foods which are of "greatest value." This procedure should, of course, bring out a discussion as to the method of deciding which foods are of "the greatest value." Milk, for example, may be made the chairman of the publicity committee since it plays such an important part in the diet of all children. The work of this committee is to devise ways and means of inducing more children to drink milk. The suggestions should be discussed and voted upon in the general meeting, and the final plan tried out with members of the organization or with children outside of the group. Brief discussions or papers by children representing certain foods can be presented upon the subject,

¹ Edgar J. Swift, *Youth and the Race*, p. 285. New York: Charles Scribner's Sons, 1912.

² Naomi Norsworthy and Mary Whitley, *The Psychology of Childhood*, p. 66. New York: Macmillan Co., 1920.

"What right have I to exist as a food?" This will place upon the individual child the responsibility of finding out why a certain food is a valuable addition to the diet. A two-day convention may be planned to which parents can be invited. This gives splendid training to the program committee and at the same time paves the way for scientific talks upon foods. This plan also presents an opportunity to give information to the parents and at the same time to solicit their co-operation.

Space does not permit giving a complete plan, but the following will suffice as an illustration:

Tea (acting as a temporary chairman): Fellow-foods of the United States, in order that this meeting may organize quickly, I move that Coffee act as chairman.

Pepper: I second the motion.

Tea: It has been moved and seconded that Coffee act as chairman of this meeting; those in favor of the motion will say "aye." (Only two votes are cast, those of Tea and Pepper.) Those opposed will say "no." (All except Tea and Pepper vote "no.") The motion is lost. Other nominations are in order.

Apple: I move that Judge Scales act as chairman of this meeting.

Peach: I second the motion.

Tea: It has been moved and seconded that Judge Scales act as chairman of this meeting; those in favor of the motion will say "aye." (Unanimous vote.) The motion is carried. Judge Scales will take the chair.

Judge Scales: Fellow-foods, the object in organizing this convention is to consider whatever may be to the best interests of the diets of the children of the United States. It is of vital importance to the entire community and to our own interests, and we hope that this meeting will help us to gain much information from each other, and so, in order that the meeting may be most valuable, we want to hear from everyone present.

The first thing that we must do is to elect a secretary who will keep the minutes of the meeting so that they may be published in the different states, as I am sure a large number of people will want to hear about the discussions. The first business, then, is the election of a secretary.

Milk: I nominate Cocoa as secretary. (Seconded.)

Judge Scales: Those in favor of Cocoa acting as secretary of this meeting will say "aye"; those opposed "no." (Everyone votes "aye.") In order that the work of this convention may proceed quickly, I shall appoint Milk as chairman of the publicity committee, Lettuce as chairman of the program committee, and Apple as chairman of the membership committee. I shall ask each chairman to choose the members of his committee.

The membership committee may report that it has refused to accept the credentials of Coffee and Tea because they have no food value. After the organization has been perfected, opportunity is given to each food to tell why it should be included in the diet. To make the work of more interest to the children, the history of some of the foods can be included. For example, after Spinach has discussed the fact that she is not as popular as she deserves to be, Potato takes the floor.

Potato: I feel that perhaps Spinach is a little discouraged about her lack of popularity, and I wish to add a little experience of my own which will illustrate the fact that people are slow about using us as foods and that very frequently we have to use little tricks in order to show the people how good we are. I think that everyone will agree with me that I am very popular now. There is a secret about my family that I do not tell very often, but I am going to repeat it here because I feel that you should know it.

It is generally said that my family came originally from South America. From there they emigrated to Spain in 1560, and some of the more restless ones came back to North America, where an Englishman called Sir Walter Raleigh became interested in my family. This was about twenty-five years later. He adopted a few members and gave them to his gardener, telling him that he had brought back some fruit from America. The gardener planted us. When we appeared as plants a few months later, we were not what the gardener thought we were, and in his wrath he carried a few of our flowers to Sir Walter Raleigh, asking him if he thought this was a fine fruit. Either Sir Walter was ignorant about our history or else he pretended he did not know, for he told the gardener to pull up the weed. When the gardener pulled out our roots, he saw what we really were, but he was not willing to accept us as a food.

Spinach: But how did you become so popular?

Potato: About 1800 a Frenchman, named Parmentier, was taken captive in a war, and the prisoners were fed potatoes. The other soldiers made fun of us, but this fine fellow recognized our value and learned all that he could about our life. When he was free, he persuaded the king, Louis XVI, to give him fifty acres to use in making an experiment. When our flowers appeared, he was so happy that he gathered a bunch of them for the king, who put them in his buttonhole. Of course, our flowers became very popular after that, and all the lords and ladies wore them. But Parmentier was not satisfied because he wanted the poorer class to see how valuable we were. So he used a little trick. He put guards around his land by day so that the people would think that we were so valuable that he was afraid we were going to be stolen. He took them away at night so that the more curious ones might steal us to see what we were like. It was not very long until one of the guards reported

that some of the neighbors had stolen some members of my family. He gave a reward to this guard who had brought him the good news. Soon afterward he gave a big dinner at which every dish contained potato in some disguised form. From that time on, our popularity increased.

A discussion of the various methods of cooking the potato may be included. Other stories may be added, such as that of the bean which was at first consecrated to the dead because of the little black spot on it, later associated with the famous Twelfth Night "Feast of the Bean King," and finally regarded as the national dish of the Americans in the famous "pork and beans"; the story of the lentils in which the Romans imagined that this vegetable caused "heaviness of mind, and made men indolent and lazy"; the story of peas which were sold in Greece and Rome at the circuses and theaters and were distributed free to the people in order to obtain their votes; the story of cabbage to which the Egyptians erected altars; the story of the tomato which was long regarded as a "love-apple" and very poisonous; and the story of the English women who used the foliage of carrots as a decoration on their hats in the same way that feathers and flowers are used today.

The story of corn is perhaps the best illustration of the possibility of connecting this work with history since corn played such a large part in the lives of the early colonists. The saving of the life of Captain John Smith, although attributed entirely to Pocahontas, was accomplished partly as a result of a corn ceremony. The troubles which the New England colonists had with the Indians was caused by the colonists stealing their corn, and the development of the corn country is no other than the story of the Great Northwest. Information regarding the history of corn is easily obtained and is therefore not given here in detail.

C. MEASURING THE RESULTS OF TEACHING HEALTH HABITS

In the previous articles of this series a score card was recommended as a means of maintaining interest among the younger children. However, a device of this type may become monotonous to a group of older children. To give variety a problem-solving method which utilizes the principles of arithmetic taught in the sixth grade may be employed.

"Health is wealth" is a well-known and frequently repeated proverb, but until the last few years we have attached very little importance to its meaning. As a result of a changed attitude toward the increased value of good health, the desired outcome of health education is not the accumulation of many facts, but the development of greater efficiency, which is regarded as an asset not only to the individual but to the nation as well. In other words, a premium has been placed upon good health—a premium which has an actual cash value.

Since one's greatest efficiency is dependent upon strict adherence to all of the laws of health, a good device for checking up the health habits of children is to place a cash value upon each. The following list of values is suggested. These values have been assigned arbitrarily so as to give a variety of figures as an aid in arithmetic; other values can easily be substituted as the particular needs of the group may demand.

Health Rule	Value
1. Going to bed at eight or nine o'clock.....	\$0. 20
2. Drinking milk three times a day.....	. 75
3. Brushing the teeth every night.....	. 15
4. Drinking a glass of water before breakfast.....	. 10
5. Eating cooked cereal every morning.....	. 30
6. Eating fruit once a day.....	. 25
7. Eating each day one vegetable in addition to potatoes.....	. 25
8. Eliminating tea and coffee from the diet.....	. 40
9. Eating no sweets between meals.....	. 30
10. Eating meat only once a day.....	. 15
11. Sleeping with the windows open.....	. 15
12. Bathing at least once a week.....	. 25
13. Eating breakfast every morning.....	. 30
14. Masticating food thoroughly.....	. 20

The work of arithmetic in many school systems centers around banking and the making of accounts. In such cases health education and the teaching of bank principles can readily be correlated. The class may be divided into two or three groups to represent various banking institutions in order to have competition. Each child keeps a record of what he has done each day and at the end of the week makes out a deposit slip, the amount of which is credited

to his account. If he violates any of the rules, he makes out a check for the amount of the rule, and this is deducted from his account. Additional interest may be obtained if at the end of the month 3 per cent of the child's bank balance is added to his account if he has gained one-quarter of a pound, 4 per cent if he has gained one-half pound, 5 per cent if he has gained three-quarters of a pound, 6 per cent if he has added a pound to his weight, etc. The aggregate number of pounds in each group may represent the capital stock of the bank. In this manner the "United Bank to Conserve Health" may be used to teach banking principles and methods of keeping accounts, while a premium in cash value is attached to health habits.

G. Stanley Hall makes this statement regarding the attitude the child of this age has toward money value:

Before puberty, there is great eagerness to possess things that are of immediate service; but after its dawn, the desire of possession takes another form, and money for its own sake, which is at first an abstraction, comes to be respected or regarded as an object of extreme desire, because it seems to be the embodiment of all values. . . . This tendency to thrift is strongest in boys, and both sexes often show the tendency to moralize, that is so strong in the early teens. Much of our school work in arithmetic is dominated by the money sense. . . . This sense tends to prevent pauperism, prodigality, is an immense stimulus to the imagination and develops purpose to pursue a distant object for a long time.¹

Thus, it appears that the psychological characteristics of children of this age afford abundant opportunity for correlating health instruction with English, history, and arithmetic.

¹ G. Stanley Hall, *Youth; Its Education, Regimen, and Hygiene*, p. 220. New York: D. Appleton & Co., 1906.